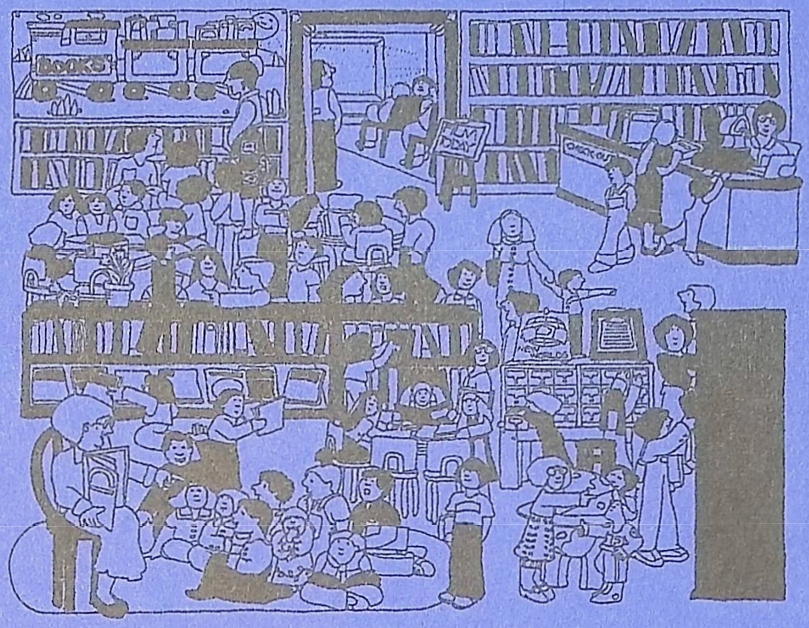
North Scott Community School District

Enrollment Trends and Projections For Class Size Study Committee



November 17, 2003

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- Enrollment Trends and Projections November 25, 2000, Board Presentation March 18, 2001

Forecasting with Cohort Survival Ratios

The cohort survival ratio is an enrollment projection method which compares the number of students in a particular grade to the number of students in the previous grade during the previous year. Ratios are computed for each grade and are then used to project future enrollments.

The ratio indicates whether a change in the number of students is indicative of enrollment that is stable, increasing or decreasing. A ratio of one indicates stable enrollment, less than one indicates declining enrollment, while greater than one indicates increasing enrollment. For example, if the district had 100 fourth graders and the next year had 95 fifth graders, the cohort survival ratio would be 0.95.

The cohort survival ratio is most applicable for districts that have relatively stable increasing or decreasing trends without major unpredictable fluctuations year to year (i.e. major job reductions in the area).

These new enrollment projections are based upon the average of the last three years, and are being used in order to account for the new housing that has been completed in the Eldridge, Long Grove, and Parkview areas of the district.

Assistance in the project by:

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Actual Enrollments for 1993-1994 through 2002-2003
Estimates for 2003-2004 through 2007-2008

PUBLIC SCHOOL ENROLLMENTS-STATE

Year	K	1	2	3	4	5	6	7	8	9	10	11	12	BEDS K-12	Other	Certified Item 7
1993-1994	36,311	35,091	36,190	36,963	36,324	37,484	37,704	38,811	38,495	38,584	36,428	34,845	32,545	475,775	21,234	497,009
1994-1995	37,402	35,301	34,775	36,326	36,960	36,540	38,036	38,459	39,039	40,593	37,874	35,400	34,078	480,783	19,809	500,592
1995-1996	37,629	36,107	35,029	34,884	36,431	37,204	37,117	38,833	38,715	41,385	39,680	36,861	34,565	484,440	20,065	504,505
1996-1997	37,101	36,614	35,706	35,004	34,918	36,450	37,604	37,890	38,801	40,892	40,277	38,093	35,650	485,000	20,523	505,523
1997-1998	36,486	35,982	36,314	35,521	34,950	34,921	36,680	38,136	37,631	40,806	39,679	38,235	36,808	482,149	22,981	505,130
1998-1999	35,772	35,699	35,866	36,500	35,776	35,106	35,429	37,529	38,374	40,741	39,652	38,275	37,166	481,885	20,649	502,534
1999-2000	34,596	35,137	35,666	36,162	36,766	36,147	35,819	36,307	37,966	41,394	39,159	37,829	37,124	480,072	18,535	498,607
2000-2001	33,977	33,946	34,952	35,818	36,448	36,975	36,576	36,704	36,458	40,660	39,929	37,592	36,892	476,927	17,364	494,291
2001-2002	34,249	32,979	33,957	35,204	36,106	36,729	37,548	37,666	37,115	39,818	39,126	38,443	36,469	475,409	14,114	489,523
2002-2003	34,090	33,047	32,767	33,653	34,803	35,861	36,581	37,693	37,281	39,434	37,958	38,027	36,728	467,923	19,098	487,021
PROJECTED ENROLLMENTS																
2003-2004	34,734	33,523	32,944	32,871	33,781	34,952	36,278	37,359	37,867	40,166	37,960	36,541	36,831	465,807	18,399	484,206
2004-2005	35,256	33,882	33,419	33,049	32,996	33,926	35,359	37,049	37,531	40,797	38,664	36,543	35,392	463,863	17,859	481,722
2005-2006	35,077	34,392	33,777	33,525	33,175	33,138	34,321	36,111	37,220	40,435	39,272	37,220	35,393	463,056	17,365	480,421
2006-2007	34,788	34,217	34,285	33,884	33,653	33,317	33,524	35,051	36,277	40,100	38,923	37,806	36,049	461,874	16,858	478,732
2007-2008	34,844	33,935	34,111	34,394	34,013	33,797	33,705	34,237	35,212	39,084	38,601	37,470	36,617	460,020	16,331	476,351

All enrollments are as of the third Friday in September. The public school enrollment projections are based upon trends observed in the number of students moving from grade to grade. The trend, calculated as an average cohort survival ratio, was used to estimate enrollments for first through twelfth grade. Kindergarten enrollments were estimated from an average ratio of kindergarten enrollments to the cohort born five years prior. Beginning with 1978-79, the grand total enrollment was taken from the Certified Enrollment form as reported to the Division of Financial and Information Services.

* Other refers primarily to special education students not associated with a given grade level. This is not a count of the number of special education students in the state. Due to the continuing trend of districts reporting special education students within specific grade levels, fewer special education students are represented in the category 'other' in recent years.

December 13, 2002.

Iowa Department of Education

Individual Public School District Enrollments and Projections

School district name (for example, Ames): [ ] Submit

NORTH SCOTT

School Year	K	1	2	3	4	5	6	7	8	9	10	11	12	BEDS K-12	SE	BEDS Sum	Certified Item 7
Enrollment History																	
93-94	201	237	220	214	209	235	253	238	256	245	218	220	216	2962	51	3013	2963
94-95	239	210	244	223	221	204	242	239	232	257	238	213	215	2977	54	3031	3018
95-96	214	236	215	255	230	228	217	256	248	262	256	225	210	3052	54	3106	3074
96-97	205	223	243	230	260	235	236	217	260	281	255	231	214	3090	18	3108	3077
97-98	207	212	231	233	222	260	250	253	206	272	264	255	219	3084	31	3115	3086
98-99	208	216	218	237	243	227	266	249	256	226	273	257	234	3110	20	3130	3068
99-00	172	215	213	219	238	241	236	262	244	276	222	251	221	3010	45	3055	3012
00-01	176	188	210	228	211	238	235	232	248	248	258	198	246	2916	78	2994	2936
01-02	173	170	178	208	220	215	232	243	242	261	236	220	198	2796	80	2876	2887
02-03	196	177	179	181	209	224	216	243	249	266	279	246	224	2889	54	2943	2923
Projected Enrollments																	
03-04	181	200	180	182	180	211	229	219	244	269	263	266	242	2866	67	2933	2912
04-05	182	185	203	183	181	182	215	232	219	263	266	251	261	2823	66	2889	2867
05-06	184	185	188	207	182	183	186	218	232	237	260	254	247	2763	64	2827	2801
06-07	179	188	188	191	206	184	187	188	218	251	234	248	249	2711	63	2774	2742
07-08	181	183	191	192	191	208	188	189	189	236	248	223	244	2663	62	2725	2687

Definitions and Special Directions:
Kindergarten enrollments were estimated from actual births five years prior. Enrollments are taken from the Basic Educational Data Survey (BEDS) and Certified Enrollment - Item 7. Special Education (SE) refers to those special education students not associated with a given grade level. It may not reflect the total number of special education students.

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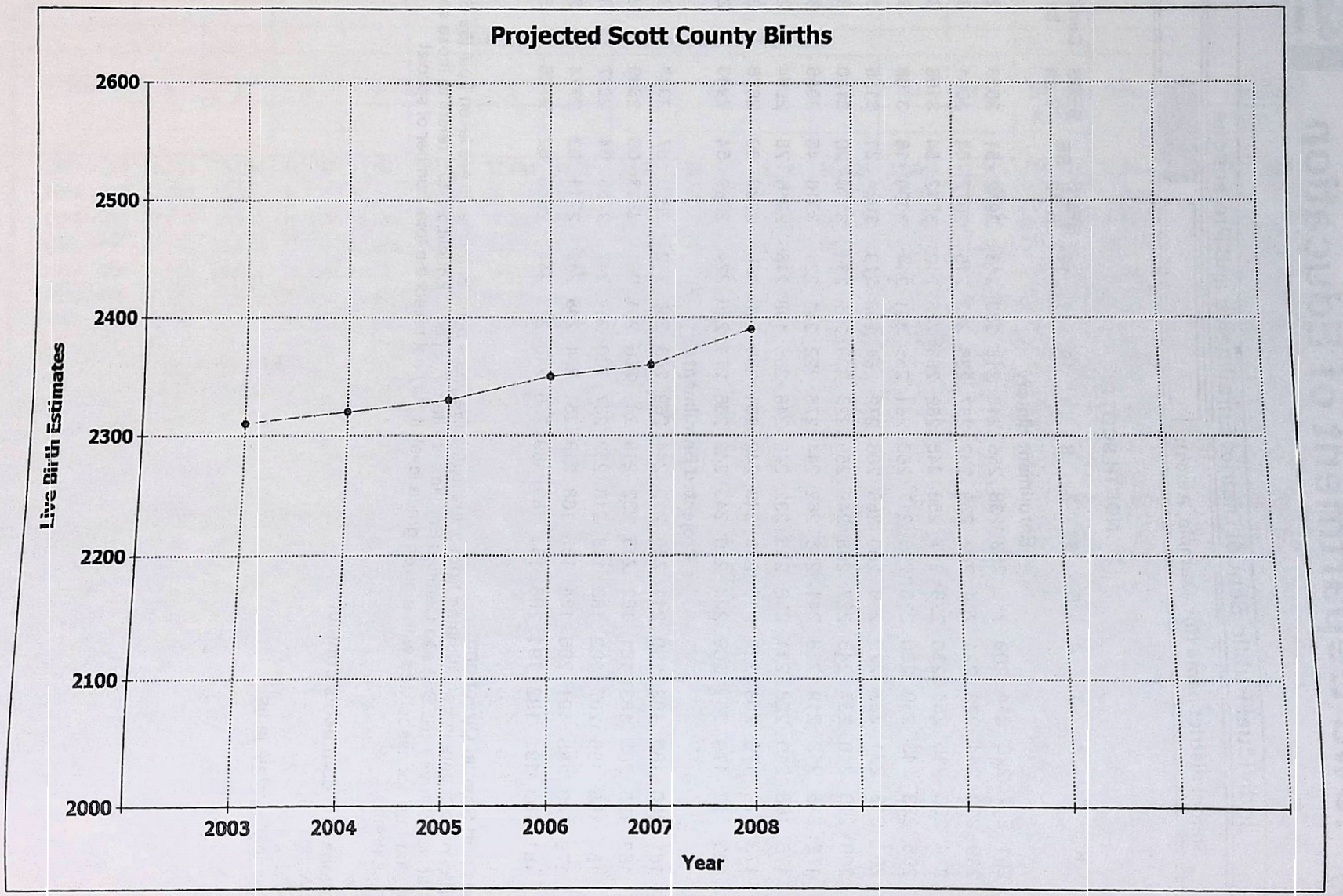
Bi-State Regional Plannin



Comparison Actual vs. Projected

	2003 Actual	2003 Projected	
Special	26	21	5
K	208	192	16
1	201	179	22
2	201	192	9
3	196	199	-3
4	197	212	-15
5	219	233	-14
6	243	250	-7
7	220	234	-14
8	243	260	-17
9	279	266	13
10	255	253	2
11	264	266	-2
12	229	226	3
	2981	2982 *	-2
		2983 *	

The 2003 projection was done November 25, 2000 by Mr. Stephen Abney and was presented to the Board March 18, 2001.

*Addition error

ENROLLMENT BY CLASS

CLASS OF	1999 Grade	Sep-99	Sep-00	Sep-01	Sep-02	Sep-03	2003 Grade
PS/MD/BD		17	21	26	23	26	
2016				0		208	K
2015				0	198	201	1
2014				175	179	201	2
2013			178	173	184	196	3
2012	K	174	189	180	190	197	4
2011	1	217	212	209	214	219	5
2010	2	216	231	227	232	243	6
2009	3	221	216	225	230	220	7
2008	4	239	244	242	243	243	8
2007	5	243	240	243	249	279	9
2006	6	241	240	242	266	255	10
2005	7	265	266	284	279	264	11
2004	8	245	251	250	246	229	12
2003	9	277	256	233	224		
2002	10	222	202	206			
2001	11	251	238				
2000	12	235					
TOTAL		3063	2984	2915	2957	2981	

CHANGE TABLE

Portion of Students in a Cohort Compared to Previous Year

	2001	2002	2003	Three-Year Average
K-1	1.00	1.02	1.01	1.01
1-2	0.95	1.06	1.11	1.04
2-3	0.99	1.05	1.06	1.03
3-4	0.98	1.02	1.04	1.01
4-5	1.04	1.02	1.02	1.03
5-6	0.99	1.02	1.05	1.02
6-7	1.01	1.00	0.95	0.99
7-8	1.01	1.02	1.00	1.01
8-9	1.06	1.09	1.11	1.09
9-10	1.00	0.98	0.96	0.98
10-11	0.90	0.98	0.94	0.94
11-12	1.02	0.96	0.93	0.97

Kindergarten Projections

North Scott - 2003	208	9.67%
Bi-State - 5 year olds	2150	in Scott County
North Scott - 2000	178	8.08%
Bi-State - 5 year olds	2201	

Bi-State Projection for Scott County

		9.67%	8.08%	Average
2004 5 year olds	2310	223	187	205
2005 5 year olds	2170	209	176	193
2006 5 year olds	2190	211	177	194
2007 5 year olds	2200	212	178	195
2008 5 year olds	2200	212	178	195

Assumes the district will receive 9.67% of the Scott County Live Births at age 5. This is up from 8.09% of Scott County 5-year olds as of the 2000 census.

ENROLLMENT PROJECTIONS BY CLASS

Scenario A
with Kindergarten 9.67%
of Scott County Projections

2003 Grade	03-04 Actual	04-05 Projection	05-06 Projection	06-07 Projection	07-08 Projection	08-09 Projection	09-10 Projection	10-11 Projection
	26	26	26	26	26	26	26	26
K	**208**	223	209	211	212	212	212	212
1	201	**210**	225	211	213	214	214	214
2	**201**	209	**218**	234	220	222	223	223
3	196	**207**	215	**225**	241	226	228	229
4	**197**	198	**209**	217	**227**	244	228	231
5	219	**203**	204	**215**	224	**234**	251	235
6	**243**	223	**207**	208	**220**	228	**239**	256
7	220	**241**	221	**205**	206	**217**	226	**236**
8	**243**	222	**243**	223	**207**	208	**220**	228
9	279	**265**	242	**265**	243	**226**	227	**239**
10	255	273	**260**	237	**260**	239	**221**	222
11	264	240	257	**244**	223	**244**	224	**208**
12	229	256	233	249	**237**	216	**237**	218
Total Enrollment	2981	2996	2969	2972	2959	2956	2976	2978
Net Increase/ (Decrease)		15	(27)	3	(13)	(2)	20	2

ENROLLMENT PROJECTIONS BY CLASS

Scenario B
with Kindergarten 8.08%
of Scott County Projections

2003 Grade	03-04 Actual	04-05 Projection	05-06 Projection	06-07 Projection	07-08 Projection	08-09 Projection	09-10 Projection	10-11 Projection
	26	26	26	26	26	26	26	26
K	**208**	187	176	177	178	178	178	178
1	201	**210**	189	178	179	180	180	180
2	**201**	209	**218**	196	185	186	187	187
3	196	**207**	215	**225**	202	190	191	193
4	**197**	198	**209**	217	**227**	204	192	193
5	219	**203**	204	**215**	224	**234**	210	198
6	**243**	223	**207**	208	**220**	228	**239**	215
7	220	**241**	221	**205**	206	**217**	226	**236**
8	**243**	222	**243**	223	**207**	208	**220**	228
9	279	**265**	242	**265**	243	226	227	**239**
10	255	273	**260**	237	**260**	239	**221**	222
11	264	240	257	**244**	223	**244**	224	**208**
12	229	256	233	249	**237**	216	**237**	218
Total Enrollment	2981	2960	2900	2867	2817	2777	2758	2721
Net Increase/ (Decrease)		(21)	(60)	(33)	(50)	(40)	(19)	(37)

ENROLLMENT PROJECTIONS BY CLASS

Scenario C
with Kindergarten Three Year Estimated Average

2003 Grade	03-04 Actual	04-05 Projection	05-06 Projection	06-07 Projection	07-08 Projection	08-09 Projection	09-10 Projection	10-11 Projection
	26	26	26	26	26	26	26	26
K	**208**	205	193	194	195	195	195	195
1	201	**210**	207	195	196	197	197	197
2	**201**	209	**218**	215	203	204	205	205
3	196	**207**	215	**225**	222	209	210	211
4	**197**	198	**209**	217	**227**	224	211	212
5	219	**203**	204	**215**	224	**234**	231	217
6	**243**	223	**207**	208	**220**	228	**239**	235
7	220	**241**	221	**205**	206	**217**	226	**236**
8	**243**	222	**243**	223	**207**	208	**220**	228
9	279	**265**	242	**265**	243	**226**	227	**239**
10	255	273	**260**	237	**260**	239	**221**	222
11	264	240	257	**244**	223	**244**	224	**208**
12	229	256	233	249	**237**	216	**237**	218
Total Enrollment	2981	2978	2935	2920	2888	2867	2868	2850
Net Increase/ (Decrease)		(3)	(43)	(15)	(32)	(21)	0	(18)

Housing Factors for Growth

Housing

Butler Township Dexter Acres	105 lots
Long Grove	189 lots

Eldridge

West of Buttermilk	240 lots
North of Maple	27 lots
West of Sheridan Meadows	40 lots
South of Pinehurst	53 lots
West of Rustic Ridge	163 lots

All presently planned residential development will occur in these areas.

OPEN ENROLLMENT

Actual

Open Enrollment by Grade Level

Grade	Open Enrollment IN	Open Enrollment OUT	Net
Pre-School	1	0	+1
K	8	1	+7
1	13	6	+7
2	8	9	-1
3	3	9	-6
4	8	5	+3
5	9	4	+5
6	8	3	+5
7	6	7	-1
8	9	6	+3
9	11	6	+5
10	5	6	-1
11	7	2	+5
12	12	8	+4
	108	72	+36

Open Enrollment by Building

	K	1	2	3	4	5	6	Total
Armstrong	1	2	2	-	1	1	2	9
Glenn	3	2	3	1	3	6	1	19
Grissom	-	-	-	-	-	1	1	2
Shepard	1	5	2	1	4	-	4	17
Ed White	3	4	1	1	-	1	-	10
TOTAL	8	13	8	3	8	9	8	57

Open Enrollment by Districts

	IN	OUT
Bennett	3	-
Bettendorf	3	18
Calamus/Wheatland	8	14
Central Clinton (DeWitt)	8	10
Davenport	83	15
Pleasant Valley	3	20
Wilton	-	1
	108	72

Davenport

Grade	Open-Enrollment IN	Approved for 2004/2005 IN
Pre-School	1	
K	6	1
1	10	
2	4	
3	3	
4	6	
5	7	1
6	6	
7	6	
8	7	
9	7	
10	4	
11	6	
12	10	
	83	2

CONCLUSION

1. North Scott enrollment trends are projected to decline in future years. This is due to the following functions.

   A. Larger classes graduating with smaller kindergarten classes being projected.
   B. Smaller Scott County birth rates.

2. Limited district wide growth will occur as a result of the immigration of families and students moving into the district and will help with the net loss due to the smaller kindergarten classes.

3. Growth will occur in the Ed White, Alan Shepard and Neil Armstrong current boundaries due to the new housing construction.

4. With the changes that Davenport Community School District has made regarding their open enrollment policy, North Scott's current 36+ open enrollment students will become a net loss of open enrollment students resulting in a loss of revenue to the district. The district currently receives over $385,000 for the 84 open enrollment students for the Davenport district.

APPENDIX

North Scott Community School District
Enrollment Trends and Projections
1984-2012

By Steve Abney

Assisted By Joe Hintze

18 March 2001

Iowa School Enrollment Trends

Enrollment in Iowa schools declined for 20 consecutive years until the 1988-89 school year. From 1988 to 1996, the state had eight consecutive years of increased enrollments. Since, the state has had four consecutive years of decline (school years 1997-98 through 2000-2001).

State enrollment projections, based on children born in 1996 to 1999, are for the decline to continue at least four more years.

Eastern Iowa districts generally had a lower enrollment in school year 2000-1 than in the previous year. In fact, the Davenport, Bettendorf, Clinton and Burlington districts were all in the top 10 districts in the state in decrease. All four Scott County districts declined in enrollment.

Other neighboring districts generally followed the statewide pattern, although Calamus-Wheatland and Central Clinton showed gains. State projections are for North Scott and all neighboring districts to lose enrollments between now and the 2004-5 school year.

The most precipitous drop among neighboring districts is expected in Bennett, which fell from 292.2 certified enrollment in 1999-2000 to 271.0 in 2000-1. State projections place that district's enrollment at 224 in school year 2004-5.

US Census projects the age 0-4 population in Iowa to gradually decline through 2025. The estimated change is from 184,000 children ages 0-4 in 1995 to 175,000 in 2025, a 5% decrease. Those estimates do not envision a dramatic change from the current situation. Thus, we expect that Iowa's population will continue to age and births will continue to decline.

North Scott Enrollment Trends

North Scott student enrollment declined from 1984-5 to 1989-90, then grew to 1998-9, and finally, began to decline again. The certified enrollment used for taxing purposes, which does not include net open enrollment and which weights special education students, began to decline a year earlier than the actual enrollment.

We will use actual enrollment for the remainder of this paper since those are the students that the district teaches and since the district receives funds for those students (some from taxes and some from sending districts).

Projection Methods

Projected enrollments are useful for planning. Projections may be made on the basis of housing units, trend lines, or demographics.

Housing units can be used by assuming that each house on average will equate to a given number of students. Thus, if the number of houses in a school district increases by 100, the number of students is assumed to grow by 100 times the average number of students per house. The problem with this method is that it does not account for changes in the number of children per household. If the increased number of houses is caused by more retirees moving into the district, or by an increase in existing families splitting into two households, the housing unit method will overstate the student population. If the increased number of houses is caused by an influx of young families, the housing unit method is likely to understate the student population.

The mathematical model is based on a linear or curvilinear extrapolation of data. While fitting a curve to the prior year data is useful, only knowledge of the underlying components of change can determine whether the curve has face validity. In as much as any number of curves can be fit to a given set of points, there must be a rationale for selecting one of them. Projected enrollment for North Scott based on the S curve that the district has experienced can be derived from the polynomial:

$$Y = -0.8782x3 + 26.799x2 - 232.08x + 3528.5$$

where y is enrollment and x is the number of years since 1983. The equation gives 2912 for school year 2001-2, which is reasonable, and the equation fits the observed data well. However, it shows an accelerated decline and returns negative enrollment by 2010.

Neither the linear equation $y = -0.875x + 3052.2$ nor the 2nd degree equation $y = 3.0868x2 - 56.438x + 3228.1$ fit the observed data well.

Therefore, the demographic method is used in this analysis.

Projecting for 1st through 12th grades

School districts in Iowa provide the state Department of Education with official enrollment figures on the third Friday in September each year. This study uses the official student count by grade from September 1984 to September 2000. Table 1 shows the official count by grade for each year.

A grade's enrollment in a given year can be shown as $x_{I,J}$ where I is the year and J is the grade. Thus $x_{2000,3}$ represents the official third grade enrollment in September 2000.

In a closed system, $x_{I+1,J+1}$ should be approximately equal to $x_{I,J}$, that is, the number of fourth grade students in 2001 should approximate the number of third grade students in 2000.

This is particularly true of the elementary and junior high grades, which have a policy of not retaining students. In the senior high school, this is more problematic. Students progress from 9th grade to 10th grade and so on by attaining a certain number of credits. It is possible for a student to be a 9th grader for consecutive years or to go from being a 9th grader one year to an 11th grader the next.

Moreover, the school population is not a closed system. Students move in and out on an almost daily basis. Limiting our analysis to the official enrollment allows us to concentrate on changes from year to year.

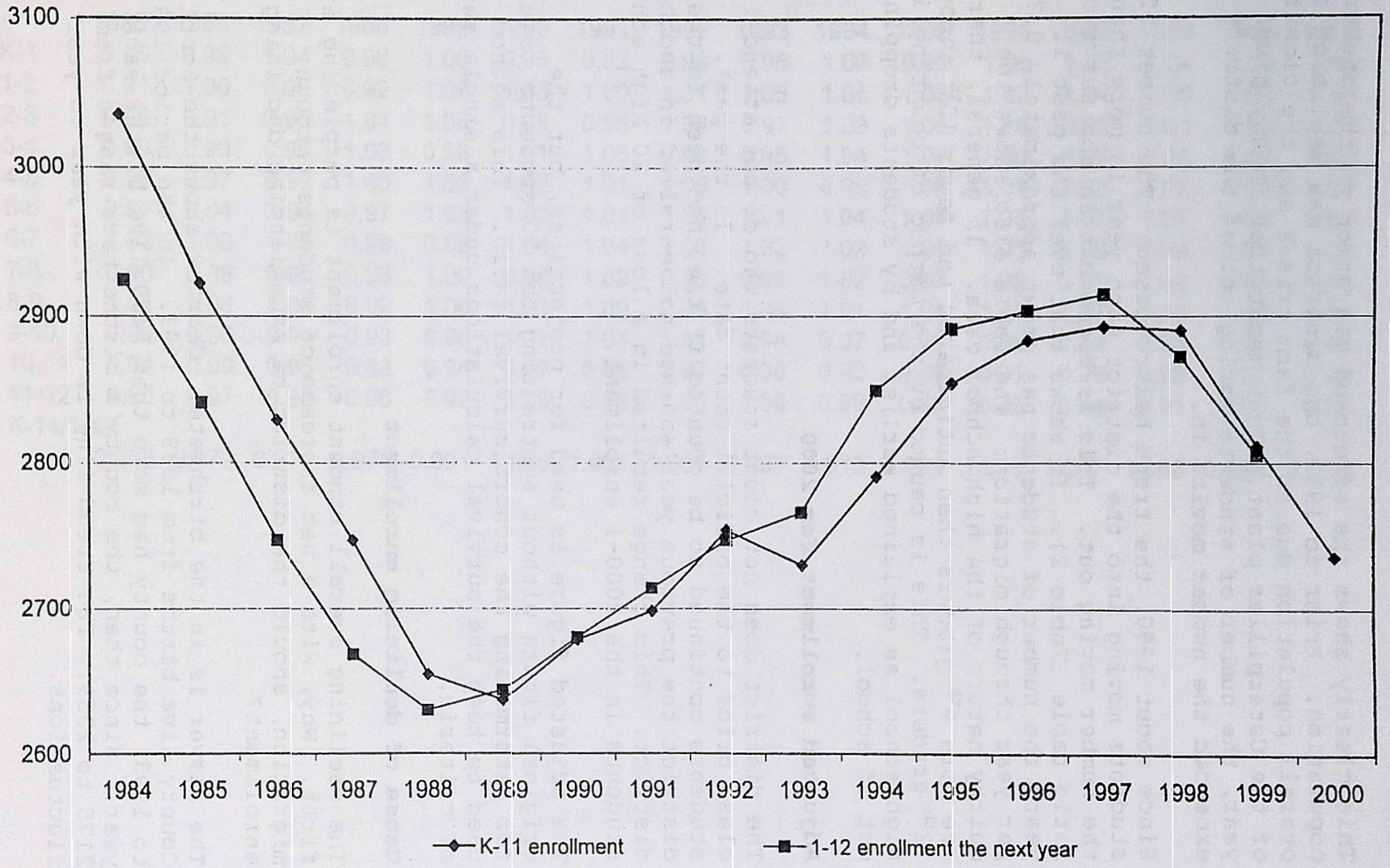
We would expect the number of students in grades 1 through 12 in a given year to approximate the number of students in kindergarten through 11th grade the previous year. The difference between the expected number and the actual number can be attributed to net movement of students in or out of the district (since death is a very minor cause of change at these ages) and to students dropping out of school.

Figure 1 shows the enrollment trend for the district. As can be seen, the K-11 enrollment overstates the 1-12 enrollment for the following year from 1984 to 1988 and understates it from 1989 to 1997, with the exception of 1992.

Official Enrollment

Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
K	253	250	229	245	237	220	236	219	245	199	239	214	207	208	209	174	178
1	243	240	244	239	236	238	209	216	206	233	210	236	223	217	216	217	189
2	246	222	239	240	221	237	245	209	218	216	244	217	243	232	216	216	212
3	232	244	201	226	249	221	224	236	218	212	223	258	230	237	238	221	231
4	229	223	241	194	232	244	223	236	234	208	220	233	259	224	244	239	216
5	240	226	217	239	194	233	250	225	249.5	233	204	233	235	266	228	243	244
6	227	233	212	204	232	200	238	252	235	251	242	215	236	251	269	241	240
7	270	232	233	222	201	227	207	247	267	239	257	256	217	251	249	265	240
8	283	244	207	221	210	202	222	225	233.5	256	243	248	260	207	256	245	266
9	282	285	259	220	219	211	204	223	223	245	258	262	283	277	228	277	251
10	265	275	274	236	204	211	215	206	225	218	237	256	258	267	275	222	256
11	266	248	273	261	219	192	205	204	200	220	213	226	232	255	262	251	202
12	242	252	241	245	251	213	201	201	205	216	215	209	215	219	233	235	238
Special	4	5	24	20	12	18	27	23	33	34	38	39	21	19	13	17	21
Tot.	3282	3179	3094	3012	2917	2867	2906	2922	2992	2980	3043	3102	3119	3130	3136	3063	2984

Enrollment trend 1984-2000



This clearly shows the effect of migration on the student population. Prior to 1989, the district was declining in overall population due to the farm crisis and the closure of the Caterpillar plant. That meant that in any given year, the number of students moving out of the district exceeded the number moving in.

Since about 1990, the trend has reversed. The number of students moving into the district each year is more than the number moving out. This is borne out in the survivor ratio table (Table 2). It shows that over the past 11 years the number of students has grown approximately 0.7% per year through migration. The table also shows the quirky nature of the high school data. In general, there are more 9th graders than anticipated and fewer 10th through 12th graders. This is caused by the method of counting in high school as explained earlier and by students dropping out of school.

Adjusted enrollment for 2000

The district does not count students who do not attend class prior to the official count date. In the past, students continued to be counted if they had been in the district the previous year and had not enrolled in another district. This change resulted in a loss of 20 high school students in the 2000-1 enrollment.

The adjusted figure is used for projections, but the original figure without subtracting the 20 students is used for determining the cohort survival ratio. This method is used to keep the survival calculations under a single set of criteria.

Cause of declining enrollment

The declining overall student enrollment is perplexing at first. Why, with a net increase of students through migration, should the district be experiencing declining enrollment?

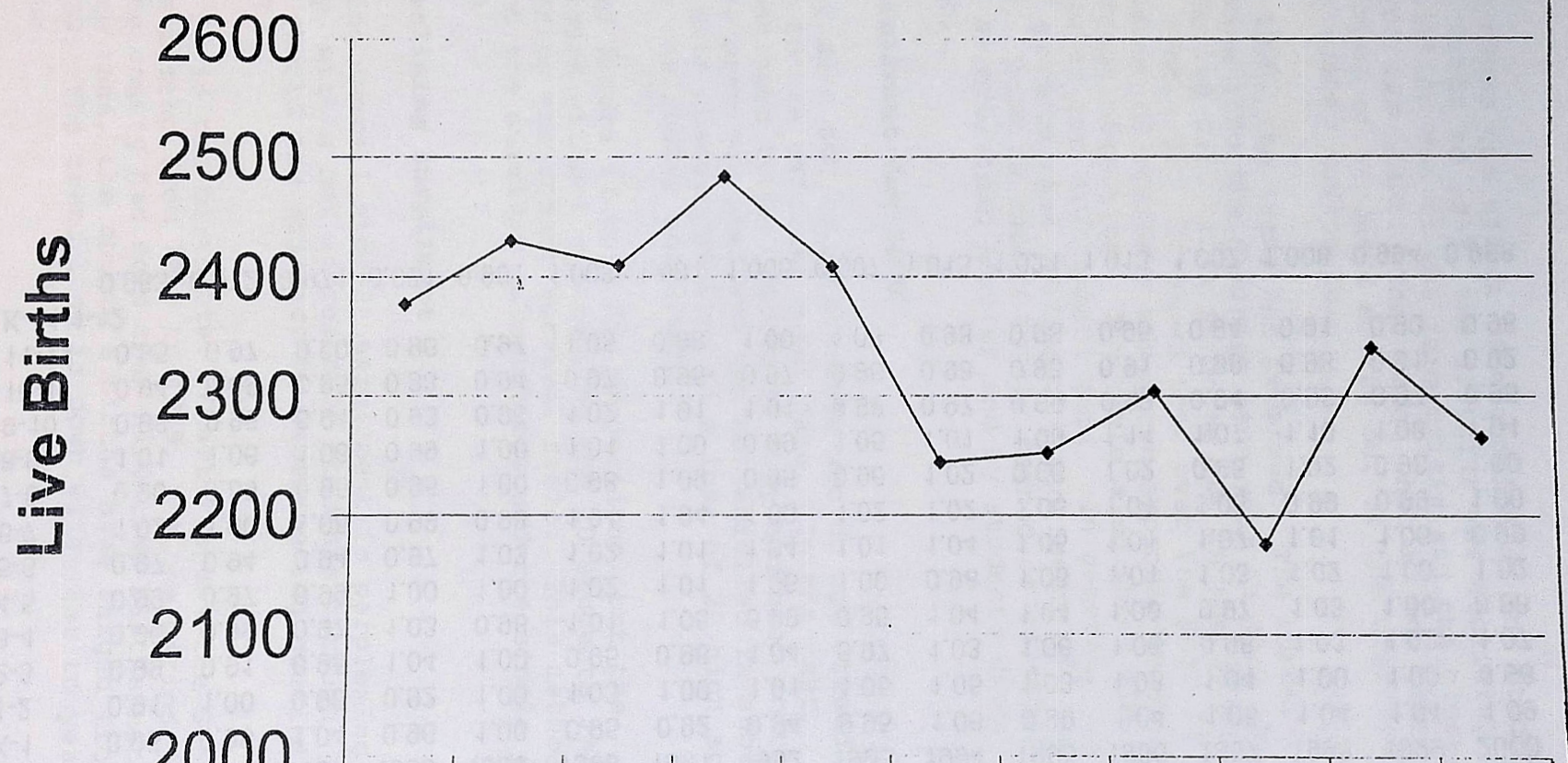
The answer is in the birthrate. Chart 2 shows the Scott County live births from 1989 to 1999. In the period 1989 to 1993, the county had more than 2400 live births each year. Since then, the county's births have ranged from 2175 to 2339. The trend line is down with year to year fluctuations.

Change Table

Portion of students in a cohort compared to previous year

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
K-1	0.95	0.98	1.04	0.96	1.00	0.95	0.92	0.94	0.95	1.06	0.99	1.04	1.05	1.04	1.04	1.09
1-2	0.91	1.00	0.98	0.92	1.00	1.03	1.00	1.01	1.05	1.05	1.03	1.03	1.04	1.00	1.00	0.98
2-3	0.99	0.91	0.95	1.04	1.00	0.95	0.96	1.04	0.97	1.03	1.06	1.06	0.98	1.03	1.02	1.07
3-4	0.96	0.99	0.97	1.03	0.98	1.01	1.05	0.99	0.95	1.04	1.04	1.00	0.97	1.03	1.00	0.98
4-5	0.99	0.97	0.99	1.00	1.00	1.02	1.01	1.06	1.00	0.98	1.06	1.01	1.03	1.02	1.00	1.02
5-6	0.97	0.94	0.94	0.97	1.03	1.02	1.01	1.04	1.01	1.04	1.05	1.01	1.07	1.01	1.06	0.99
6-7	1.02	1.00	1.05	0.99	0.98	1.04	1.04	1.06	1.02	1.02	1.06	1.01	1.06	0.99	0.99	1.00
7-8	0.90	0.89	0.95	0.95	1.00	0.98	1.09	0.95	0.96	1.02	0.96	1.02	0.95	1.02	0.98	1.00
8-9	1.01	1.06	1.06	0.99	1.00	1.01	1.00	0.99	1.05	1.01	1.08	1.14	1.07	1.10	1.08	1.04
9-10	0.98	0.96	0.91	0.93	0.96	1.02	1.01	1.01	0.98	0.97	0.99	0.98	0.94	0.99	0.97	0.95
10-11	0.94	0.99	0.95	0.93	0.94	0.97	0.95	0.97	0.98	0.98	0.95	0.91	0.99	0.98	0.91	0.92
11-12	0.95	0.97	0.90	0.96	0.97	1.05	0.98	1.00	1.08	0.98	0.98	0.95	0.94	0.91	0.90	0.98
K-11/1-12	0.963	0.972	0.971	0.971	0.991	1.003	1.001	1.006	0.997	1.013	1.021	1.013	1.007	1.008	0.994	0.998

Scott County (IA) Births



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Live Births	2376	2430	2409	2483	2408	2243	2251	2303	2175	2339	2264

Projecting kindergarten enrollment

While prior year enrollment is adequate to project grades 1-12, birth date is required to estimate the kindergarten class each year.

Table 3 shows US Census projections of births for Iowa through 2012. The data shows that births have declined each year since 1995 and are expected to generally decline throughout the period.

Dr. Xiaoping Wang, Education Consultant, Iowa Department of Education, uses a cohort survival ratio to project kindergarten enrollments from the births five years earlier. She attributes 7.6% of the births to North Scott Community School District. Dr. Wang's project enrollments for North Scott and for the state through 2004 are given at Tables 4 and 5.

In using her figures, please note that these tables use the last year of the school year, that is 1995 refers to school year 1994-95, whereas we have been using the first year, in this case 1994, since the official enrollment figure is from September 1994. Dr. Wang's dating is useful in budget calculations since the 1994-95 enrollment is used for 1995-96 allowable growth calculations.

Dr. Wang's projections show Iowa enrollment falling 2% over the five years from 1999-2000 to 2004-5. She projects North Scott to show an 8% enrollment decrease over the same period. She shows cohorts growing as they progress through the grades, but that is not enough to overcome the significantly smaller elementary classes.

Dr. Wang's projected North Scott kindergarten classes fluctuate less than the known births through 1999. This is because of data smoothing on her part.

Table 6 shows the state's data and projections on kindergarten enrollment for each of the four main Scott County school districts. Each of the four districts has experienced smaller kindergartens than in the past. The assumption used in the state's computation is that North Scott will receive 9.9% of the public school kindergarten class each year. This data shows the percent of students

US Census Projections for Iowa

Year	Births	% change	cum %
1995	37,125		
1996	36,996	-0.35%	-0.35%
1997	36,814	-0.49%	-0.84%
1998	36,708	-0.29%	-1.12%
1999	36,656	-0.14%	-1.26%
2000	36,622	-0.09%	-1.35%
2001	36,480	-0.39%	-1.74%
2002	36,503	0.06%	-1.68%
2003	36,413	-0.25%	-1.92%
2004	36,328	-0.23%	-2.15%
2005	36,293	-0.10%	-2.24%
2006	36,301	0.02%	-2.22%
2007	36,300	0.00%	-2.22%
2008	36,287	-0.04%	-2.26%
2009	36,254	-0.09%	-2.35%
2010	36,186	-0.19%	-2.53%
2011	36,101	-0.23%	-2.76%
2012	35,900	-0.56%	-3.30%

Individual Public School District Enrollments and Projections

Enter school district name (for example, Ames)

Search

Your query returned 1 record(s).

North Scott

Year Ending	K	1	2	3	4	5	6	7	8	9	10	11	12	K-12	SE	Total
Enrollment History																
1991	238	212	246	226	226	252	242	207	222	203	213	203	195	2885	35	2920
1992	223	218	211	237	240	228	254	251	226	223	208	205	202	2926	62	2988
1993	250	210	220	222	236	250	238	246	215	203	214	181	184	2869	113	2982
1994	201	237	220	214	209	235	253	238	256	245	218	220	216	2962	51	3013
1995	239	210	244	223	221	204	242	239	232	257	238	213	215	2977	54	3031
1996	214	236	215	255	230	228	217	256	248	262	256	225	210	3052	54	3106
1997	205	223	243	230	260	235	236	217	260	281	255	231	214	3090	18	3108
1998	207	212	231	233	222	260	250	253	206	272	264	255	219	3084	31	3115
1999	208	216	218	237	243	227	266	249	256	226	273	257	234	3110	20	3130
2000	172	215	213	219	238	241	236	262	244	276	222	251	221	3010	45	3055
Projected Enrollments																
2001	178	171	220	214	221	241	249	238	260	257	274	212	245	2980	31	3011
2002	175	178	175	221	216	224	249	251	236	274	255	261	206	2921	31	2952
2003	177	174	181	178	223	219	232	251	249	249	272	243	255	2903	30	2933
2004	172	177	177	182	180	226	226	233	249	263	247	260	237	2829	30	2859
2005	177	171	180	178	184	183	233	228	232	263	261	236	253	2779	29	2808

Definitions and Special Directions:
Kindergarten enrollments were estimated from actual births five years prior. Enrollments are taken from the Basic Educational Data Survey (BEDS). Special Education (SE) refers to those special education students not associated with a given grade level. It may not reflect the total number of special education students.

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Public Sch ! Statewide ' nmary : lov DE

Public School District Statewide Enrollment Summary

Actual Enrollments for 1990-1991 through 1999-2000
Estimates for 2000-2001 through 2004-2005

PUBLIC SCHOOL ENROLLMENTS-STATE

Year Ending	K	1	2	3	4	5	6	7	8	9	10	11	12	Total	Other*	Grand Total
1991	38,778	37,117	37,192	37,022	37,642	37,408	35,885	35,361	34,930	34,768	34,067	31,688	30,928	462,786	20,613	483,399
1992	37,841	37,702	36,419	37,414	37,134	37,897	37,818	36,755	35,449	36,745	34,019	33,332	31,648	470,173	21,278	491,451
1993	36,390	36,608	37,151	36,553	37,644	37,389	38,119	38,613	36,839	37,094	35,656	32,947	33,008	474,011	21,331	495,342
1994	36,311	35,091	36,190	36,963	36,324	37,484	37,704	38,811	38,495	38,584	36,428	34,845	32,545	475,775	21,234	497,009
1995	37,402	35,301	34,775	36,326	36,960	36,540	38,036	38,459	39,039	40,593	37,874	35,400	34,078	480,783	19,809	500,592
1996	37,629	36,107	35,029	34,884	36,431	37,204	37,117	38,833	38,715	41,385	39,680	36,861	34,565	484,440	20,065	504,505
1997	37,101	36,614	35,706	35,004	34,918	36,450	37,604	37,890	38,801	40,892	40,277	38,093	35,650	485,000	20,523	505,523
1998	36,486	35,982	36,314	35,521	34,950	34,921	36,680	38,136	37,631	40,806	39,679	38,235	36,808	482,149	22,981	505,130
1999	35,772	35,699	35,866	36,500	35,776	35,106	35,429	37,529	38,374	40,741	39,652	38,275	37,166	481,885	20,649	502,534
2000	34,596	35,137	35,665	36,162	36,766	36,147	35,819	36,307	37,966	41,394	39,159	37,829	37,124	480,072	18,484	498,556
PROJECTED ENROLLMENTS																
2001	35,393	33,689	34,918	35,742	36,283	36,928	36,636	36,563	36,430	40,467	40,185	37,602	36,708	477,544	20,343	497,887
2002	35,190	34,465	33,479	34,992	35,862	36,443	37,428	37,397	36,686	38,830	39,285	38,587	36,487	475,131	20,241	495,372
2003	35,430	34,267	34,250	33,550	35,109	36,020	36,937	38,205	37,523	39,102	37,696	37,723	37,443	473,255	20,161	493,416
2004	35,446	34,501	34,053	34,323	33,663	35,264	36,508	37,704	38,334	39,995	37,960	36,197	36,605	470,553	20,046	490,599
2005	35,344	34,517	34,286	34,125	34,438	33,811	35,742	37,266	37,831	40,859	38,827	36,451	35,124	468,621	19,963	488,584

All enrollments are as of the third Friday in September. The public school enrollment projections are based upon trends observed in the number of students moving from grade to grade. The trend, calculated as an average cohort survival ratio was used to estimate enrollments for first through twelfth grade. Kindergarten enrollments were estimated from an average ratio of kindergarten enrollments to the cohort born five years prior. Beginning with 1978-79, the grand total enrollment was taken from the Certified Enrollment form as reported to the Bureau of Administration and School Improvement Services.

* **Other** refers primarily to Special Education students not associated with a given grade level. This is NOT a count of the number of special education students in the state.

For further information, contact:

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E-mail: xwang@ed.state.ia.us

Feedback
Public School Statewide Summary Comments

Scott Co.		Scott County Kindergarten Enrollment						NS as %	% of births	
Year	Births	Year	Bett.	Dav.	NS	PV	Total	of Total	to publics	
1989	2376	1994	318	1351	239	170	2078	11.5%	87.5%	
1990	2430	1995	323	1352	214	201	2090	10.2%	86.0%	
1991	2409	1996	312	1371	205	190	2078	9.9%	86.3%	
1992	2483	1997	330	1328	207	187	2052	10.1%	82.6%	
1993	2408	1998	301	1315	208	174	1998	10.4%	83.0%	
1994	2243	1999	297	1186	172	192	1847	9.3%	82.3%	Actual
1995	2251	2000	281	1175	178	172	1806	9.9%	80.2%	Projected
1996	2303	2001	275	1149	175	168	1767	9.9%	76.7%	
1997	2175	2002	279	1168	177	171	1795	9.9%	82.5%	
1998	2339	2003	271	1134	172	166	1743	9.9%	74.5%	
1999	2264	2004	279	1167	177	171	1794	9.9%	79.2%	

Source: Iowa Department of Education

attending non-public schools fluctuating each year, due to smoothing of the birth data.

Special education

The majority of special education students are shown with their grade in the official enrollment. However, some special education students do not progress through the grades in the official enrollment. These are shown on two lines, preschool disabled and MD, that are included in the district's total enrollment.

Special education student numbers have fluctuated greatly over the years due in part to changes in how they were counted.

As the numbers are relatively small, we use the district's 2000 official count in those two classes as a constant in projecting this segment of the population.

Projected enrollment

The three populations - special education, kindergarten and grades 1-12 - are added to derive the overall projected enrollment for the district.

Four projections are shown, based on varying assumptions about the future:

Projection 1 (Table 7) - Assumes the share of Scott County live births that become North Scott kindergarten students gradually rises to 10%. Assumes the best three years (1994-5 to 1996-7) from the historical cohort survival rates apply. Assumes Scott County births in 2000 and beyond gradually decline.

Under this projection, North Scott enrollment declines very slowly to 2934 students in the year 2008 and then begin to grow, reaching 2976 for school year 2012-3.

Projection 2 (Table 8) - Assumes the share of Scott County live births that become North Scott kindergarten students is constant at 7.6%. Assumes the historical cohort survival rates apply in the coming years. Assumes births in 2000 and beyond are constant.

Under this projection, North Scott enrollment reaches steady state in 2012 with an enrollment of 2517.

Projection 1 -- Population grows through rapid in-migration; County births decline

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
K	178	180	174	192	190	191	193	196	199	201	204	206	208
1	189	183	185	179	197	195	196	198	202	205	207	210	212
2	212	196	190	192	185	205	203	204	206	209	212	214	217
3	231	223	206	199	201	195	215	213	214	216	219	223	225
4	216	238	229	212	205	207	200	221	219	220	222	226	229
5	244	219	241	233	215	208	211	204	225	222	223	226	229
6	240	253	227	250	241	223	216	218	211	233	230	231	234
7	240	247	260	234	258	248	229	222	225	217	240	237	238
8	266	240	247	260	234	257	248	229	222	224	217	239	237
9	251	286	258	266	280	252	277	267	247	239	241	233	258
10	256	246	281	253	261	275	247	272	262	242	234	237	229
11	202	242	233	266	239	247	260	234	257	248	229	222	224
12	238	196	235	226	258	232	239	252	226	249	240	222	215
Special	21	21	21	21	21	21	21	21	21	21	21	21	21
Total	2984	2970	2987	2982	2985	2955	2954	2949	2934	2945	2940	2947	2976

Projection 2 -- Population grows through in-migration; births constant

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
K	178	178	178	178	178	178	178	178	178	178	178	178	178
1	189	179	179	179	179	179	179	179	179	179	179	179	179
2	212	193	182	182	182	182	182	182	182	182	182	182	182
3	231	215	196	185	185	185	185	185	185	185	185	185	185
4	216	233	217	197	186	186	186	186	186	186	186	186	186
5	244	220	237	221	200	190	190	190	190	190	190	190	190
6	240	251	226	243	227	206	195	195	195	195	195	195	195
7	240	246	257	232	250	233	211	200	200	200	200	200	200
8	266	238	244	255	230	248	231	210	199	199	199	199	199
9	251	280	251	257	269	242	261	243	221	209	209	209	209
10	256	247	275	247	253	264	238	256	239	217	205	205	205
11	202	245	236	263	235	241	252	227	245	228	207	196	196
12	238	198	239	231	257	230	236	247	222	240	223	203	192
Special	21	21	21	21	21	21	21	21	21	21	21	21	21
Total	2984	2942	2938	2890	2853	2786	2746	2700	2642	2609	2560	2528	2517

Projection 3 (Table 9) - Assumes the share of Scott County live births that become North Scott kindergarten students remains at 7.6%. Assumes the historical cohort survival rates apply. Assumes births in 2000 and beyond gradually decrease.

North Scott enrollment declines to 2372 by the year 2012 in this projection.

Projection 4 (Table 10)- Assumes the share of Scott County live births that become North Scott kindergarten students gradually rises to 9%. Assumes the historical cohort survival rates apply in the coming years. Assumes births in 2000 and beyond gradually decrease.

In this scenario, enrollment declines to 2576 by the year 2012.

Figure 3 graphically compares the four projections.

Likelihood of projections

Births are more likely to decrease than increase or remain steady. The district's share is likely to increase gradually, but is unlikely to reach 13% of the public school students in the next decade, which would be 10% of all students.

Projection 1 assumes that the best 3-year period is repeated over the next 12 years. Projection 2 assumes constant births. Neither is likely. Projection 3 is the most pessimistic, assuming that North Scott will continue with its current share of kindergarten children. Projection 4 assumes some growth in North Scott's share, but declining births.

Projection 4 is the most likely.

What could happen to change this projection

Several possible events could change the projection:

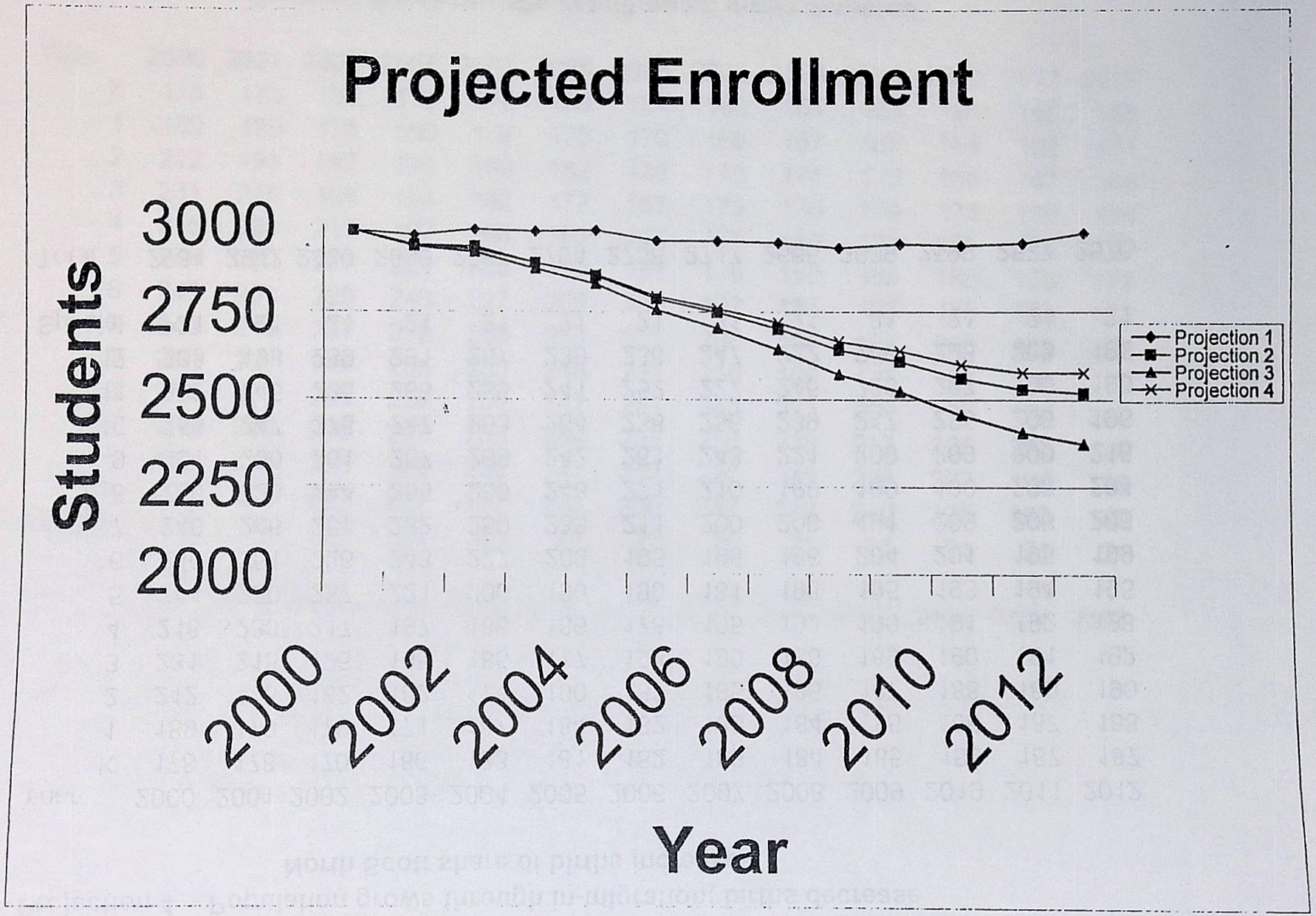
1) Births increase. This is unlikely in the long run. The trend in advanced post-industrial societies, such as the US, Europe and Japan, is for women to have fewer children. In Japan and parts of Europe, the average

Projection 3 -- Population grows through in-migration; births decrease

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
K	178	175	165	178	172	169	167	166	164	163	161	160	158
1	189	179	176	166	179	173	170	168	167	165	164	162	161
2	212	193	182	179	169	182	176	173	171	170	168	167	165
3	231	215	196	185	182	172	185	179	176	174	173	170	169
4	216	233	217	197	186	183	173	186	180	177	175	174	172
5	244	220	237	221	200	190	187	176	190	183	180	178	177
6	240	251	226	243	227	206	195	192	181	195	188	185	183
7	240	246	257	232	250	233	211	200	197	185	200	193	190
8	266	238	244	255	230	248	231	210	199	195	184	199	192
9	251	280	251	257	269	242	261	243	221	209	205	194	209
10	256	247	275	247	253	264	238	256	239	217	205	202	190
11	202	245	236	263	235	241	252	227	245	228	207	196	193
12	238	198	239	231	257	230	236	247	222	240	223	203	192
Special	21	21	21	21	21	21	21	21	21	21	21	21	21
Total	2984	2939	2922	2874	2830	2754	2703	2644	2571	2522	2455	2404	2372

Projection 4 -- Population grows through in-migration; births decrease
North Scott share of births increases

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
K	178	178	170	186	183	181	182	183	184	185	186	187	187
1	189	179	179	171	187	184	182	183	184	185	186	187	188
2	212	193	182	182	174	190	187	185	186	187	188	189	190
3	231	215	196	185	185	177	193	190	188	189	190	191	192
4	216	233	217	197	186	186	178	195	192	190	191	192	193
5	244	220	237	221	200	190	190	181	198	195	193	194	195
6	240	251	226	243	227	206	195	195	186	204	201	198	199
7	240	246	257	232	250	233	211	200	200	191	209	206	203
8	266	238	244	255	230	248	231	210	199	199	190	208	204
9	251	280	251	257	269	242	261	243	221	209	209	200	218
10	256	247	275	247	253	264	238	256	239	217	205	205	196
11	202	245	236	263	235	241	252	227	245	228	207	196	196
12	238	198	239	231	257	230	236	247	222	240	223	203	192
Special	21	21	21	21	21	21	21	21	21	21	21	21	21
Total	2984	2942	2930	2890	2857	2794	2758	2717	2665	2639	2599	2577	2576


Projected Enrollment
Students
3000
2750
2500
2250
2000
2000
2002
2004
2006
2008
2010
2012
Year
Projection 1
Projection 2
Projection 3
Projection 4

woman has fewer than two children in her lifetime. The US has not reached that stage, but seems to be headed there.

2) More home schooling. Students who are home schooled are already factored into these calculations. They are born, but do not attend public school. Over the past 15 years, the number of students who home school has probably increased and that is also factored into the calculations. Only if the trend changed (an increase in the rate of increase in home schooling or a decrease in home schooling) would this be a factor. Even then, it is likely to be minor.

3) Many more open enrolled students. Possible, but not especially likely. Future open enrollment is difficult to project. Likely, North Scott will continue to be a net recipient of students. Because of its size, Davenport is the major contributor to open enrolled students now and probably will continue to be. A dramatic change in public opinion about Davenport schools could affect North Scott.

4) Increased non-public schooling. The recent creation of a Lutheran high school in northwest Davenport makes this likely. It is unknown how many students who currently attend public school will take this option. Iowa Department of Education projects steady enrollment in non-public schools statewide, but has no county projections. We have insufficient data to establish a trend in Scott County.

5) Immigration of foreign born families. Given that foreign born females have higher fertility rates than native born females and are a generally younger population, an influx of foreign born adults would tend to increase births and thus, enrollments.

6) Sharing with another district. It appears that bordering small school districts could be forced to send their high school students to another district within the next ten years. Some smaller district enrollments suggest that the high school will fall from around 80-85 students today to around 60 within ten years. State projections are for the district to decline to 224 students for the 2004-5 school year.

7) Major economic development. If a large company were to purchase in one of the industrial parks and hire 2000 workers, or any similar scenario were to occur, a new population trend would begin and this analysis would need major revision.

9) Recession. Historically, births decline in periods of economic uncertainty and during high unemployment. Sometime in the next 12 years, the Iowa economy will worsen.

Implications

1) The property tax rate will gradually decline. Property tax can be thought of as having two components, one based on student population and one not. An example of the component not based on enrollment is the Physical Plant and Equipment Levy (PPEL). As enrollment declines, all other things being equal, taxing authority will increase less rapidly than the statewide allowable growth.

2) The number of faculty will decline. With relatively less taxing power, the district will be unable to keep the same number of faculty members to service a declining student population.

Possible actions

1) Market the district to potential open enrollment students, non-public students, home-schooled students and students who move into the Quad Cities area. Other districts might complain and might initiate their own marketing efforts.

2) Seek an agreement with a smaller school district to receive that district's high school students. While that district may not be ready for this solution, their enrollment trend will make an agreement ever more attractive.

3) Make an increased effort to boost the official enrollment by contacting or visiting students who had been in the district the previous year, but who have not attended during the first part of the school year.

4) Begin now to plan for decreased enrollment at all levels by reevaluating staffing patterns. Do not replace every teacher who retires.

5) Seek a sharing arrangement with another high school for the four mandatory sequences when enrollment in those courses allows.

6) Use the ICN for courses. North Scott could export its courses to other districts on a reimbursable basis. Since more than 90% of the districts in Iowa are smaller than North Scott is, exporting courses would seem to be more feasible than importing them.

7) Increase the district's attractiveness to immigrant adults. One possibility is to offer foreign language in every grade.

8) Study the possibility of multi-age classes for elementary grades as a way to adjust faculty to reduced enrollment.

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25 November 2000